

FIG. 2

PL: ZnO VS p-ZnO:As AT 20 K

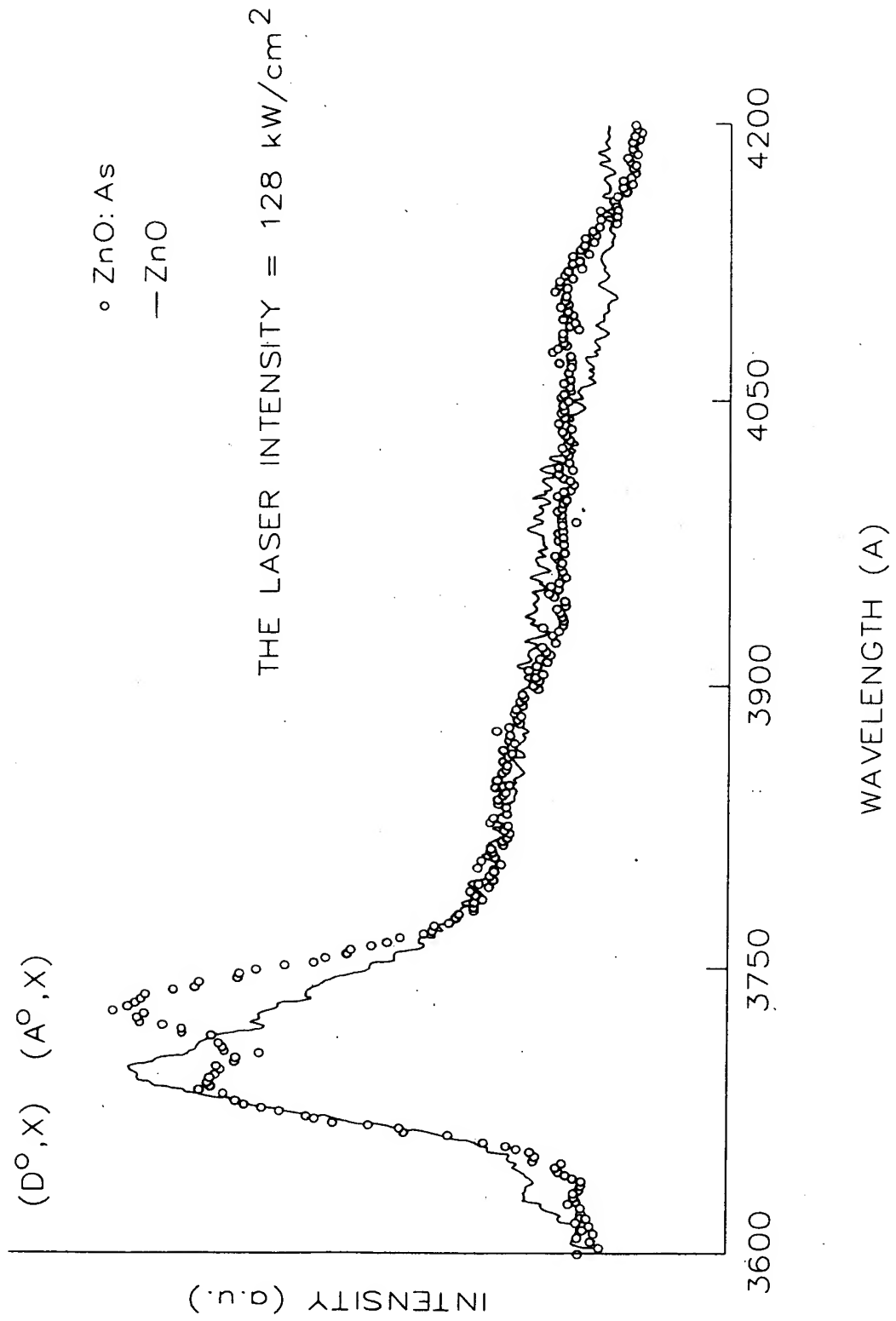


FIG. 3

SIMS: p-ZnO

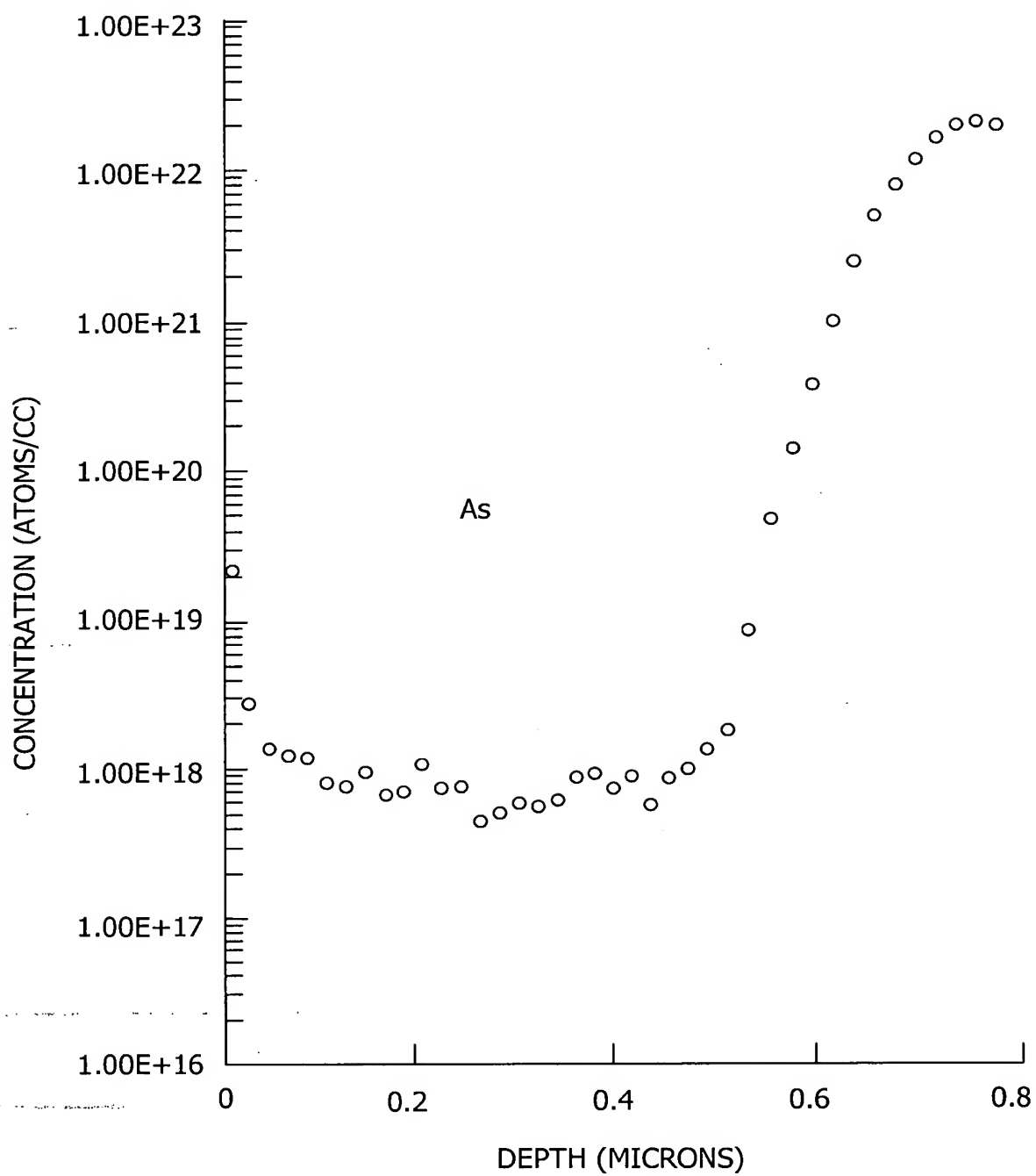
PRIMARY ION BEAM: Cs⁺

FIG. 4

0.5 μm

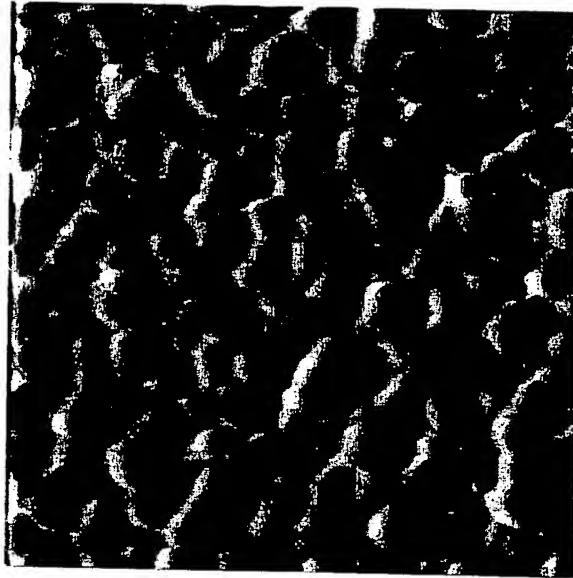


FIG. 5

0.5 μm

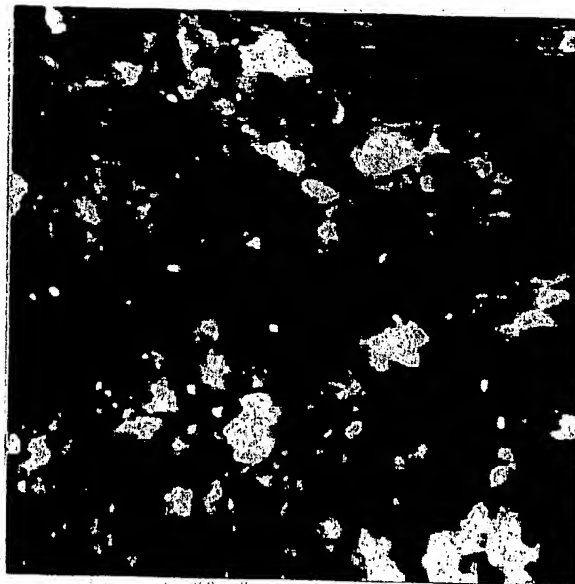


FIG. 6

Table 1. Electrical properties of Al-doped ZnO on Al₂O₃ measured by the Van der Pauw method. The column headings are, respectively from left to right, magnetic field in units of Gauss, Hall coefficient in units of cm³/Coulomb, resistivity in units of Ohm-cm, carrier density in units of cm⁻³, carrier mobility in units of cm²/volt-sec, and sample temperature in units of Kelvin.

Field (Gauss)	Hall Coefficient (cm ³ /Coulomb)	Resistivity (Ohm-cm)	Carrier Density (cm ⁻³)	Mobility (cm ² /volt-sec)	Temperature (Kelvin)
5004	-1.13	1.03	-5.52 x 10 ¹⁸	-1.09	290
4002	-1.07	1.03	-5.81 x 10 ¹⁸	-1.04	290
3001	-1.13	1.03	-5.53 x 10 ¹⁸	-1.09	290
1998	-1.32	1.03	-4.74 x 10 ¹⁸	-1.27	290
1001	-1.50	1.03	-4.16 x 10 ¹⁸	-1.45	290

FIG. 7

I-V MEASUREMENT

Al-doped ZnO

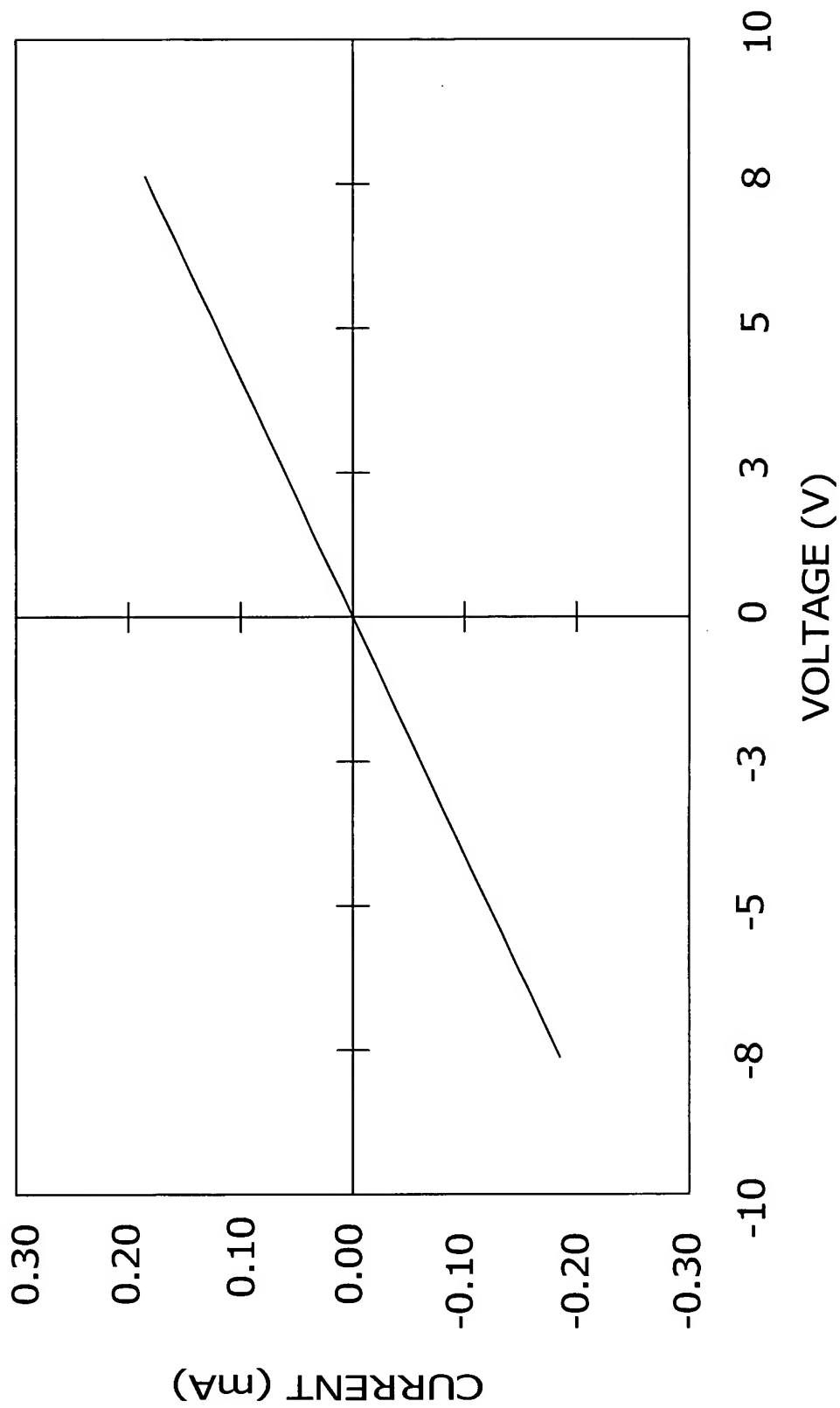


FIG. 8

I-V MEASUREMENT

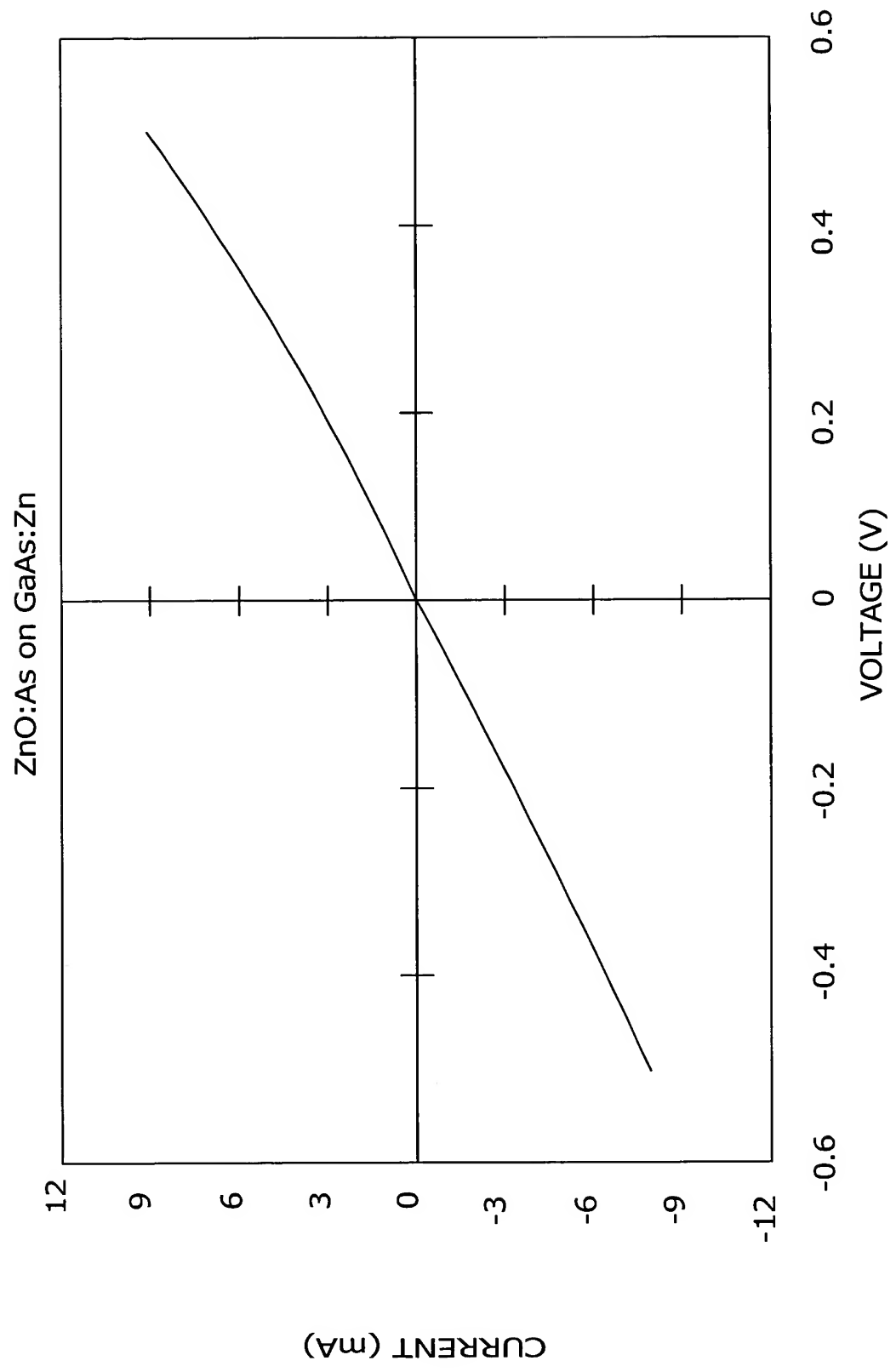


FIG. 9

I-V MEASUREMENT

PN-JUNCTION OF ZnO

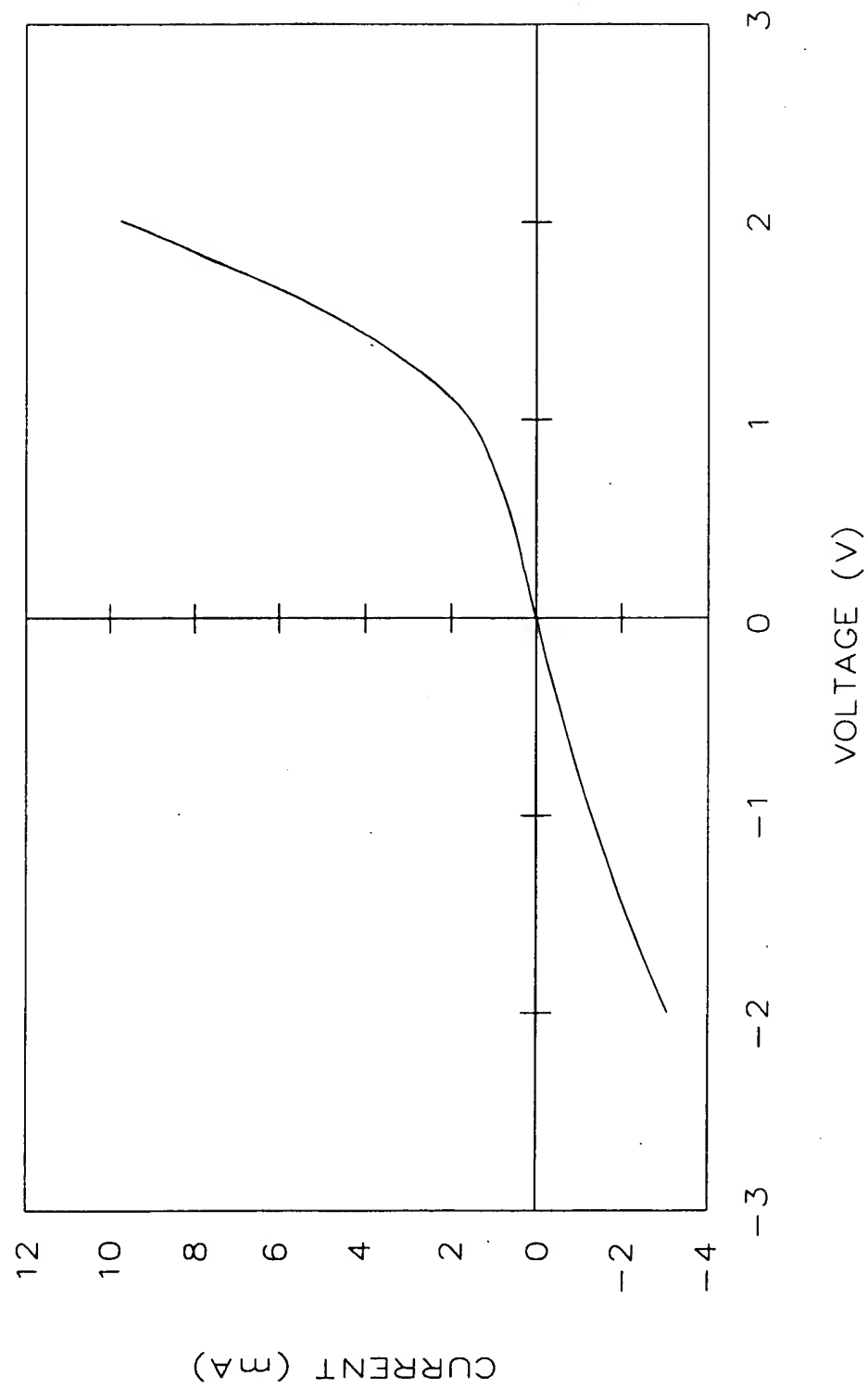


FIG. 10

A CROSS SECTION OF A ZnO P-N JUNCTION

